BEFORE THE MINNESOTA PUBLIC UTILITIES COMMISSION

Gregory Scott	Chair
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Phyllis A. Reha	Commissioner

In the Matter of Interstate Power Company's 2001 Resource Plan

ISSUE DATE: September 4, 2002

DOCKET NO. E-001/RP-01-1628

ORDER ACCEPTING RESOURCE PLAN AND SETTING REQUIREMENTS FOR NEXT RESOURCE PLAN

PROCEDURAL HISTORY

On November 1, 2001, Interstate Power Company (Interstate), an operating utility of Alliant Energy Corporation (Alliant or the Company), filed its integrated resource plan for 2001-2016.

On March 8, 2002, the Department of Commerce (DOC) filed comments recommending the Commission accept the Company's 2001 Integrated Resource Plan. The DOC recommended improvements for the Company's future integrated resource plans.

On May 6, 2002, Interstate filed reply comments indicating its willingness to work with the DOC to improve future resource plans.

On July 25, 2002, Interstate's integrated resource plan came before the Commission.

FINDINGS AND CONCLUSIONS

I. Resource Planning in General

The resource planning statute and rules are detailed, but they basically require utilities to file biennial reports on (1) the projected energy needs of their service areas over the next 15 years; (2) their plans for meeting projected need; (3) the analytical process they used to develop their plans for meeting projected need; and (4) their reasons for adopting the specific resource mix proposed to meet projected need. Minn. Stat. § 216B.2422 and Minn. Rules Chapter 7843.

These requirements are designed to strengthen utilities' long term planning processes by providing input from the public, other regulatory agencies, and the Commission. They are also designed to ensure that utilities give adequate consideration to factors whose public policy importance has grown in recent years, such as the environmental and socioeconomic impact of different resource

mixes. (For example, the statute requires utilities to develop plans for meeting 50% and 75% of new and refurbished capacity needs with conservation and renewable energy; it also requires them to factor into resource decisions the environmental costs of different generation technologies.)

Although the Commission must approve, reject, or modify the resource plans of investor-owned utilities, the resource planning process is largely collaborative and iterative.

It is collaborative because there are few hard facts dictating resource choices or deployment timetables. The facts on which resource decisions depend -- how quickly an area and its need for electricity will grow, how much electricity will cost over the lifetime of a generating facility or a purchased power contract, how much conservation potential the service area holds and at what cost -- all require the kind of careful judgment which sharpens with exposure to the views of engaged and knowledgeable stakeholders.

It is iterative because analyzing future energy needs and preparing to meet them is not a static process; strategies for meeting future needs are always evolving in response to changes in actual conditions in the service area. When demographics, economics, or technologies change, so do resource needs and strategies for meeting them.

While a concrete document is necessary to focus discussion, parties' positions evolve over the course of each resource plan proceeding, and from one proceeding to the next.

II. The Legal Standard

The statute directs the Commission to "approve, reject, or modify the plan of a public utility, as defined in section 216B.02, subdivision 4, consistent with the public interest." Minn. Stat. § 216B.2422, subd. 2.

The rules require the Commission to consider at least the following factors in evaluating resource plans:

> Resource options and resource plans must be evaluated on their ability to:
>
> A. maintain or improve the adequacy and reliability of utility service;
>
> B. keep the customers' bills and the utility's rates as low as practicable, given regulatory and other constraints;
>
> C. minimize adverse socioeconomic effects and adverse effects upon the environment;
>
> D. enhance the utility's ability to respond to changes in the financial, social, and technological factors affecting its operations; and
>
> E. limit the risk of adverse effects on the utility and its customers from financial, social, and technological factors that the utility cannot control.
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> Minn. Rules, part 7843.0500, subp. 3.

III. The Company and its Resource Plan

A. The Company

Interstate is a wholly owned subsidiary of Alliant, a large, multi-state utility operating in Minnesota, Iowa, Illinois, and Wisconsin. Alliant serves approximately 900,000 electric customers with a system peak demand of approximately 5,000 megawatts. Minnesota accounts for less than 5 percent of its electric customers.

At the time of filing, Alliant was composed of three operating utilities: IES Utilities Inc. (IES), Interstate Power Company (IPC) and Wisconsin Power and Light (WP&L). Since that time IES and IPC have been combined into a new entity called Interstate Power and Light (IP&L). Alliant now has two independent operating utility companies, IP&L and WP&L. IP&L is the utility with customers in Minnesota and is responsible for the Minnesota resource plan. However, at the request of the DOC, IP&L filed its resource plan representing the entire utility system of Alliant's utilities.

Alliant owns all or a portion of 46 generating facilities, including 19 baseload plants, with a total capacity of approximately 5,200 megawatts (MW). The baseload plants are fueled by coal, natural gas or nuclear power. Combustion turbines and diesel generators at 20 locations provide supplemental energy at times throughout the year when demand is highest. The Company also has eight hydro dams.

B. The Resource Plan

The Resource Plan covers the period from 2001 through 2016. Alliant provides for resource needs on a total system basis. The first step in developing this plan is to develop a system load forecast that includes the needs of all firm customers of Alliant's utilities. Then the system load forecast, plus a reserve requirement, is matched against existing capacity to determine the utilities' resource needs.

By using the Electric Generation Expansion Analysis System (EGEAS) computer model, all combinations of existing resources and future resource alternatives are considered in determining an optimal expansion plan, referred to as the reference case. Renewable alternatives, demand-side management (DSM) options and conventional supply-side units are all considered concurrently in the resource planning process. The ultimate goal is to minimize cost, maximize reliability and minimize risk.

Once a reference case is constructed, multiple scenarios are developed by changing various input scenarios. Each scenario is then evaluated assuming a high and a low externality value as defined in prior Commission orders.[1]

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[1] *In the Matter of the Quantification of Environmental costs Pursuant to Laws of Minnesota 1993, Chapter 356, section3,* Docket No. E-999/CI–93-583,ORDER AFFIRMING IN PART AND MODIFYING IN PART ORDER ESTABLISHING ENVIRONMENTAL COST VALUES, July 2, 1997 and updated *In the Matter of the Investigation into*

C. Forecasts

Independent forecasts are first developed for the separate utilities. The forecasts are then aggregated for a total company forecast. Since each of the utility systems are unlikely to peak at the same hour, the total system peak demand forecast is adjusted by a diversity factor to account for the differences. The Company forecasted its energy requirements and peak demand under three scenarios: low, base and high. For its high and low forecasts, Interstate produced forecasts using assumptions for high and low economic conditions.

Interstate projected that its base energy use will increase from 5,556,150 megawatt-hours (MWH) in 2001 to 6,510,812 MWH in 2016. Peak demand was projected to increase from 941.9 MW to 1,301 MW during that same period.

D. Demand-Side Management (DSM)

In order to develop DSM programs Interstate first identified energy efficient technologies available in the marketplace. The last extensive energy conservation technology search was conducted in 1994 as part of Interstate's filing in Iowa. An update to this study is now being performed and results, although Iowa-specific, will provide information on current energy efficient technologies that will have direct application to Minnesota markets.

After energy efficient technologies are identified qualitative screening is applied. Adjustments are made for weather in Interstate's service territory and then an economic screening is performed to weigh the measure's cost against the benefits. Energy efficient options that pass both the qualitative and economic screening are packaged into programs.

For the current filing no new DSM programs were selected in the evaluation process as being cost-effective for this resource plan.

E. Supply-Side Resources

The proposed plan calls for the addition of significant supply-side resources. The immediate need for 2002 will most likely be met with bulk power market short-term purchase power agreements from already existing facilities or facilities under construction. The resource plan calls for combustion turbine and combined cycle capacity in the years 2003 through 2005. Alliant will build or lease facilities in Iowa provided the appropriate rate treatment is granted.

Environmental and Socioeconomic Costs, Docket No. E-999/CI-00-1636, ORDER UPDATING EXTERNALITY VALUES AND AUTHORIZING COMMENT PERIODS ON CO2, PM2.5, AND APPLICATION OF EXTERNALITY VALUES TO POWER PURCHASES, May 3, 2001.

IV. The DOC's Position on the Resource Plan

A. The Company's Forecasts

The DOC recommended that the Commission accept Alliant's current energy forecasts.

The DOC concluded that Alliant's energy and peak demand forecasts were acceptable and that Interstate's energy and demand forecasts were reasonable and satisfy the Commission's Order in docket No. E001/RP–99-1185.[2]

Since Alliant's forecast of its energy sales was simply the sum of its forecasts for Interstate, IES and WP&L and its forecast of its peak demand was the sum of its forecasts for Interstate, IES and WP&L adjusted for a diversity factor,[3] the DOC determined that in order to evaluate Alliant's forecast it was necessary to analyze the forecast of each of the three utilities.

Although the DOC concluded that Alliant's energy and peak demand forecasts were acceptable and that Interstates' and IES' energy and demand forecasts were reasonable, the DOC had concerns regarding the energy and demand forecasts of WP&L. The DOC recommended that Alliant be required to meet with the DOC by December 1, 2002 to discuss how it can improve its WP&L forecasts.

B. Demand-Side Resources

The DOC argued that Alliant has not provided a rigorous analysis of the most cost-effective amount of DSM resources. However, the DOC recognized the Company was awaiting the results of an update to the Company's 1994 energy conservation research that the Company believes will be applicable to its Minnesota service territory, even though the research is Iowa-specific. The DOC argued that the Company should be required to work with the DOC to develop a method that will yield the appropriate level of DSM. Further, the DOC argued that the Commission should not accept Alliant's next resource plan until the DSM modeling is complete.

C. Supply-Side Resources

The supply-side resources in Interstate (and IES) are dominated by coal-fired units. Since several of the Company-owned units date to the 1950's and 1960's the DOC argued that Alliant should discuss in its next resource plan the potential for the Company to either retire older units or spend significant resources needed to upgrade the equipment of these plants, including upgrades for purposes of environmental compliance.

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[2] *In the Matter of the 1999-2014 Integrated Resource Plan of Interstate Power Company, an Operating Utility of Alliant Energy*, ORDER MODIFYING RESOURCE PLAN AND SETTING STANDARDS FOR NEXT RESOURCE PLAN, June 8, 2000.

[3] The diversity factor accounts for the fact that each individual utility's coincident peak demand may occur at a different time period.

Interstate and IES have one nuclear station, Duane Arnold. Its license expires in 2014 and the Company has indicated that it intends to pursue a license extension. DOC recommended that the Company provide an update in its next resource plan filing regarding its plans to seek a license extension for this facility.

D. New Resources

The DOC concluded that the Company included a reasonable spectrum of options in its EGEAS modeling.

The Company's modeling results in a reference plan with peaking resources to be acquired in the years 2002 and 2003. In the years 2004 to 2015 a variety of base load units, including gas-fired combined cycle units, circulating fluidized-bed coal units, and pulverized coal units were selected. Ethanol, biomass and wind resources were not selected as part of the reference plan.

E. Renewable Resources

The DOC stated that the company should meet the renewable energy production goal in 2005 and come close in 2006, but not in 2007 or subsequent years. The DOC recommended that Alliant be required to report on its progress toward meeting the renewable energy goal in its next integrated resource plan filing. The DOC also argued that Alliant should work with the DOC to develop an appropriate way to model wind in Alliant's system.

F. Transmission Resources

The DOC recommended that Alliant, in its next resource plan, provide a description of its transmission planning objectives, strategy, and current conclusions, and a description of the Company's interactions with all current and future studies that address Company needs or may have an impact on Company transmission lines.

G. DOC's Recommendations

The DOC recommended that the Commission accept the current integrated resource plan. For Alliant's next integrated resource plan the DOC recommended that the Commission require Alliant to:

1. Meet with the DOC by December 1, 2002 to improve the Company's energy and demand forecast, using the recommendations made in the forecasting session as a starting point.
2. Discuss the potential for the Company to either refire older units or spend significant resources upgrading these units.
3. Discuss the Company's plans to seek a license extension for its Duane Arnold nuclear power plant.
4. Work with the DOC and other interested parties to develop a mutually acceptable method for modeling demand-side management. Find the Company's next IRP to be incomplete until this DSM analysis is complete.
5. Report on the Company's progress towards meeting the renewable energy goal.

6. Provide a description of its transmission objectives, strategy, and current conclusions, and a description of the Company's interactions with all current and future studies that address Company needs or may have an impact on Company transmission facilities. Also, provide a description of its role in MISO planning functions and its role in preparing the biennial Minnesota Transmission Projects Report.
7. Include an analysis to determine whether and how its NOx and SO2 strategies are the least-cost methods of compliance.
8. Work with the DOC and other interested parties on an appropriate method for modeling wind in the Company's system.
9. Include contingency plans for complying with regional haze requirements that might emerge from Iowa, Minnesota or Wisconsin control strategy plans.
10. Include an update on its mercury reduction goals, strategies and achievements to date.
11. Monitor industry-based initiatives for cutting greenhouse gas emissions.
12. Update its CO2 contingency plan to see how resource mix changes can lower the cost of meeting customer demand under different forms of regulations.
13. Develop a comprehensive multi-emissions strategy that will access the current status of its plants, evaluate technical and economic feasibility of current status of its plants, evaluate technical and economic feasibility of control scenarios, and propose a flexible plan prioritizing options.
14. Update its estimate of distributed generation potential after consulting with the DOC.

V. Alliant's Reply to the DOC's Comments

In response to the DOC's recommendations, Alliant had the following comments:

Recommendation Number 1: *Meet with the DOC by December 1, 2002 to improve the Company's energy and demand forecast, using the recommendations made in the forecasting session as a starting point.*

The DOC stated that it had some concerns regarding the energy and demand forecasts of WP&L. IP&L argued that the Commission should not direct IP&L to work with the DOC to adopt the DOC's recommended methods to change the forecasts of WP&L (which serves no customers in Minnesota) or the forecasts of IP&L pertaining to meeting the needs of its customers outside of Minnesota. It argued that other agencies have jurisdiction over the forecasts of IP&L outside of Minnesota, that other Commissions have taken an active role in the review of forecasts and forecasting methodologies used by IP&L and WP&L in their respective jurisdictions.

Recommendation Number 2: *Discuss the potential for the Company to either refire older units or spend significant resources upgrading these units.*

IP&L agreed to discuss the potential to either refire older units or spend significant resources upgrading them.

Recommendation Number 3: *Discuss the Company's plans to seek a license extension for its Duane Arnold nuclear power plant.*

The Company agreed to discuss the license extension for its Duane Arnold nuclear power plant in its next resource plan filing to the extent it is appropriate to evaluate the license extension at that time.

Recommendation Number 4: *Work with the DOC and other interested parties to develop a mutually acceptable method for modeling demand-side management. Find the Company's next IRP to be incomplete until this DSM analysis is complete.*

IP&L agreed to work with the DOC and other interested parties to develop a mutually acceptable method for modeling DSM. However, the Company argued that the DOC's recommendation to find the Company's next resource plan incomplete until the DSM analysis is complete is not justified.

Recommendation Number 5: *Report on the Company's progress towards meeting the renewable energy goal.*

IP&L agreed to report on the progress in meeting the renewable energy goal as required by the State of Minnesota.[4]

Recommendation Number 6: *Provide a description of its transmission objectives, strategy, and current conclusions, and a description of the Company's interactions with all current and future studies that address Company needs or may have an impact on Company transmission facilities. Also, provide a description of its role in MISO planning functions and its role in preparing the biennial Minnesota Transmission Projects Report.*

The Company agrees to this recommendation.

Recommendation Number 7: *Include an analysis to determine whether and how its NOx and SO2 strategies are the least-cost methods of compliance.*

IP&L agreed to provide an analysis of its NOx and SO2 strategies but argued that the concept of least cost methods would not necessarily be pertinent.

Recommendation Number 8: *Work with the DOC and other interested parties on an appropriate method for modeling wind in the Company's system.*

The Company stated it believed an appropriate method for modeling wind in the Company's Minnesota system could be agreed upon.

Recommendation Number 9: *Include contingency plans for complying with regional haze requirements that might emerge from Iowa, Minnesota or Wisconsin control strategy plans.*

The Company agreed to this recommendation.

Recommendation Number 10: *Include an update on its mercury reduction goals, strategies and achievements to date.*

[4] See Minn. Stat. § 216B.241.

The Company agreed to include a discussion regarding mercury reduction in its next resource plan.

Recommendation Number 11: *Monitor industry-based initiatives for cutting greenhouse gas emissions.*

The company agreed to this recommendation.

Recommendation Number 12: *Update its CO2 contingency plan to see how resource mix changes can lower the cost of meeting customer demand under different forms of regulations.*

The Company agreed to this recommendation.

Recommendation Number 13: *Develop a comprehensive multi-emissions strategy that will access the current status of its plants, evaluate technical and economic feasibility of current statutes of its plants, evaluate technical and economic feasibility of control scenarios, and propose a flexible plan prioritizing options.*

The Company agreed to this recommendation.

Recommendation Number 14: *Update its estimate of distributed generation potential after consulting with the DOC.*

The Company agreed to this recommendation.

VI. Commission Action

The Commission agrees with the DOC that Interstate's resource plan meets the requirements of the resource planning statute and rules and should be accepted. The Commission also agrees with the DOC that there are several issues that need to be addressed more fully in the company's next resource plan in order to better understand the utility's future needs and determine the best resource mix for meeting those needs. The Commission, recognizing that the Company has agreed to address many of the issues raised by the DOC in its next resource plan filing, will expect the Company to do so.

The Commission further recognizes the DOC's concern with forecasting done by other Alliant companies and supports the DOC working with the staff of other State Commissions on issues of concern and inviting the Company to join in those discussions.

The Commission also agrees with the DOC's request that the Company increase the number of scenarios that it uses in its demand-side modeling and the Commission will require the Company to meet with the DOC before its next resource plan for input on this matter.

ORDER

1. The Commission accepts Interstates integrated resource plan for 2001-2016 as filed by the Company and requires Interstate to:

    1. In its next resource plan, discuss the potential for the Company to either refire older units or spend significant resources upgrading these units;

2. In its next resource plan, discuss the Company's plans to seek a license extension for its Duane Arnold nuclear power plant;
3. In its next resource plan, report on the Company's progress towards meeting the renewable energy goal;
4. In its next resource plan, provide a description of its transmission objectives, strategy, and current conclusions, and a description of the Company's interactions with all current and future studies that address Company needs or may have an impact on Company transmission facilities. Also, provide a description of its role in MISO planning functions and its role in preparing the biennial Minnesota Transmission Projects Report;
5. In its next resource plan, include an analysis to determine whether and how its NOx and SO2 strategies are the least-cost methods of compliance;
6. Work with the DOC and other interested parties on an appropriate method for modeling wind in the Company's system;
7. In its next resource plan, include contingency plans for complying with regional haze requirements that might emerge from Iowa, Minnesota or Wisconsin control strategy plans;
8. In its next resource plan, include an update on its mercury reduction goals, strategies and achievements to date;
9. Monitor industry-based initiatives for cutting greenhouse gas emissions;
10. Update its CO2 contingency plan to see how resource mix changes can lower the cost of meeting customer demand under different forms of regulations;
11. Develop a comprehensive multi-emissions strategy that will assess the current status of its plants, evaluate technical and economic feasibility of its plants, evaluate technical and economic feasibility of control scenarios, and propose a flexible plan prioritizing options;
12. Update its estimate of distributed generation potential after consulting with the DOC;
13. On the issue of forecasting, the DOC will work with staff in some of the other state commissions and invite the Company to join in;
14. In its next resource plan, the Company shall increase the number of scenarios that it models. The DOC has agreed to meet with the Company prior to the Company's next resource plan to advise on doing other scenarios.

2. This Order shall become effective immediately.

BY ORDER OF THE COMMISSION

Burl W. Haar
Executive Secretary

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